C. Description of the Plan Area

The summary of biological resources provided below supplements and updates biological information included in the following documents, which are incorporated herein by reference:

- Draft Biological Resources and Habitat Analysis, City of Carlsbad, California (Michael Brandman Associates [MBA] and Dudek & Associates 1992)
- Public Review Draft Habitat Management Plan for Natural Communities in the City of Carlsbad, California (Carlsbad 1994)
- Review Draft Biological Goals, Standards, and Guidelines for Multiple Habitat Preserve Design [for the MHCP] (Ogden 1997)

Biological information in the first two documents was updated extensively in connection with the MHCP and through studies conducted for the HMP after 1994. The most pertinent of these database updates are as follows:

- In 1996, vegetation mapping for the MHCP subregion was updated and refined using 1995 satellite imagery to systematically update the regional vegetation database. Where available, project-specific field mapping performed since 1992 also was incorporated.
- In 1996-97, data on the distribution of certain species of concern were refined and coordinated. Where biologists or other reliable sources suggested additions or deletions to species location points, these changes were made to the GIS database so long as the information could be verified by USFWS, CDFG, or Ogden biologists.
- In 1997, the Carlsbad vegetation and species maps were further updated and refined by merging the most accurate and current portions of GIS data files that had previously been maintained independently by SANDAG and the City. SANDAG produced maps showing where the two databases differed. Where differences occurred, Ogden biologists, in concert with city staff, identified which version was most accurate and current. A master map was then created by merging the best information from each file for each area of the city. This effort also involved incorporating project-specific field mapping where available, along with limited field-truthing by Ogden biologists to verify mapping accuracy.

The major differences in biological resources as described in the 1994 Draft HMP and this 1998 HMP are as follows:

1. Some areas previously mapped as natural habitat have been cleared of vegetation for development projects since 1994. Species locations associated with these cleared areas were also considered to be removed unless specific information indicates that the species still exists there.
2. The updated 1998 vegetation maps recognize some vegetation communities that were not recognized in the 1994 version, most notably southern maritime

chaparral (a rare community supporting a number of narrow endemic plant species) as distinct from southern mixed chaparral (a more common community).

3. More complete species location information is now available for a number of species, most notably some of the narrow endemic (highly restricted) plant species.

1. Regional and Local Context

Carlsbad is situated along the Pacific Coast in northern San Diego County, California. It is bordered on the north and northeast by the City of Oceanside, on the east by the cities of Vista and San Marcos, on the southeast by unincorporated County lands, and on the south by the City of Encinitas (see Figure 1). The coastal portions of Carlsbad are largely developed; however, natural vegetation communities remain in and around the three coastal lagoons and on some of the higher, steeper-sloped, inland portions of the City. Oceanside and Vista are largely built-out, such that in many places the natural communities end abruptly along the City border. The remaining landscape linkages to natural communities outside the City occur along the southeastern border with San Marcos and the unincorporated lands and along the southern border with Encinitas. CSS in the City also is part of a regionally significant stepping stone corridor that extends into Oceanside, connecting gnatcatcher populations in Orange and Riverside counties with those south and east of Carlsbad.

The City of Carlsbad's land use planning process includes a unique Growth Management Program. Under that program, the City is divided into 25 Local Facilities Management Zones (LFMZs) for planning purposes (see Figure 2). These LFMZs are also useful for conservation planning purposes, and they have been utilized throughout this document.

The majority of the land in the City of Carlsbad is privately owned. Major private owners of undeveloped land include Bank of America (Villages of La Costa), San Diego Gas and Electric, and several ranching families that have lived in the Carlsbad area for many years. Public agencies that own significant tracts of undeveloped land include the City of Carlsbad, County of San Diego and State of California (Parks Department, Fish and Game Department, and University of California Natural Reserve System).

There is no federally owned undeveloped land in Carlsbad. This situation is different from other portions of the region which include significant acreage of land owned by the Bureau of Land Management or other federal agencies.

2. Habitat and Species

As described in detail in Appendix A and summarized in Table 1, natural vegetation communities cover approximately 8,758 acres (36% of the City's total area). The remainder of the City is agricultural lands (approximately 1,812 acres), disturbed lands (approximately 1,251 acres) or developed lands (approximately 12,749 acres). Figure 3 illustrates the distribution of vegetation types.

Table 2 identifies the HMP Covered Species, identifies their listing status and habitat type, and indicates the known occurrence of significant populations of each species by LFMZ. Table 2 also includes a list of species for which the City is not requesting coverage as an HMP species at this time. These additional species may be added with a Plan Amendment after the Regional MHCP is completed.

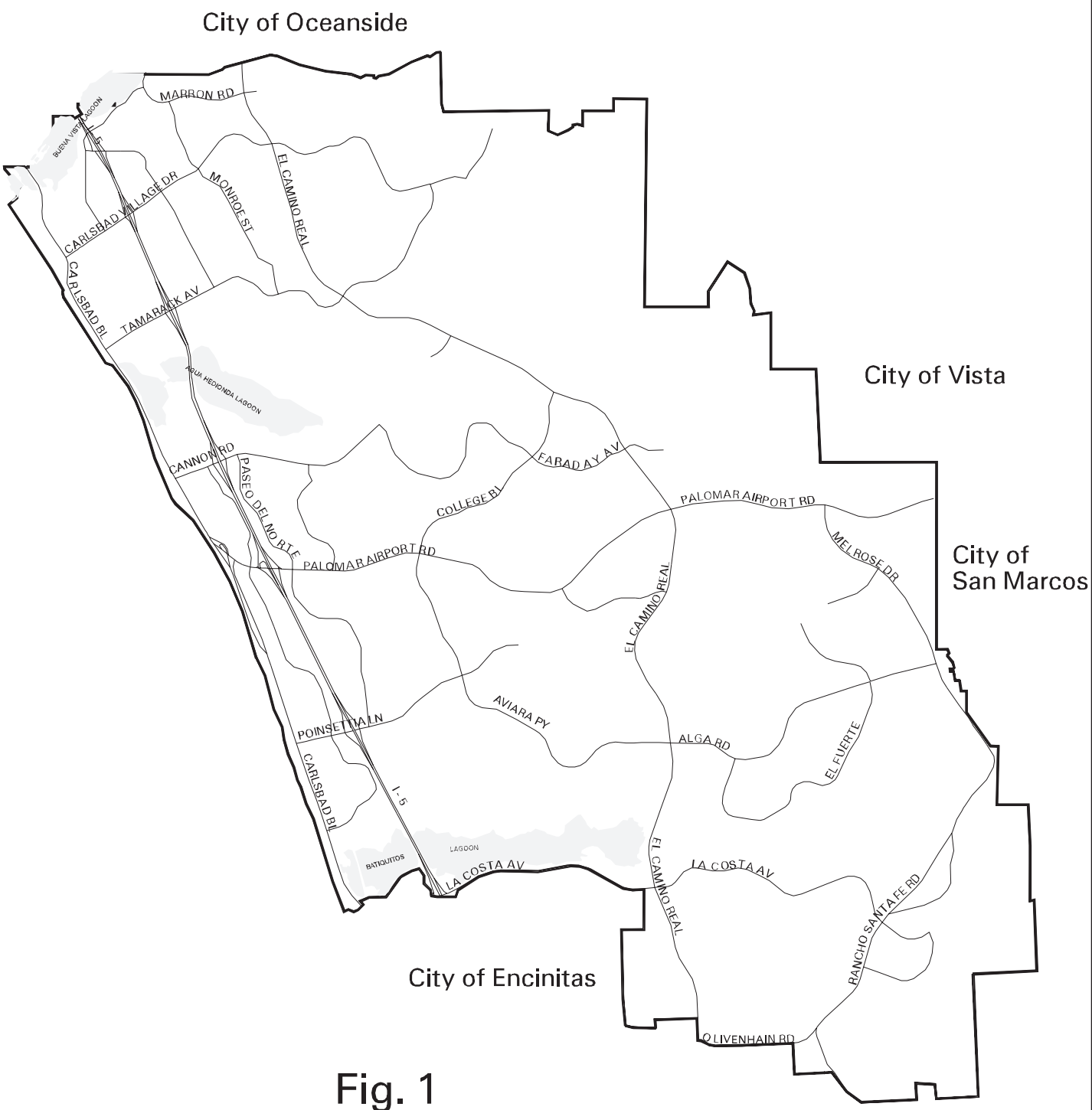

Fig. 1
HMP Plan Area

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MILES

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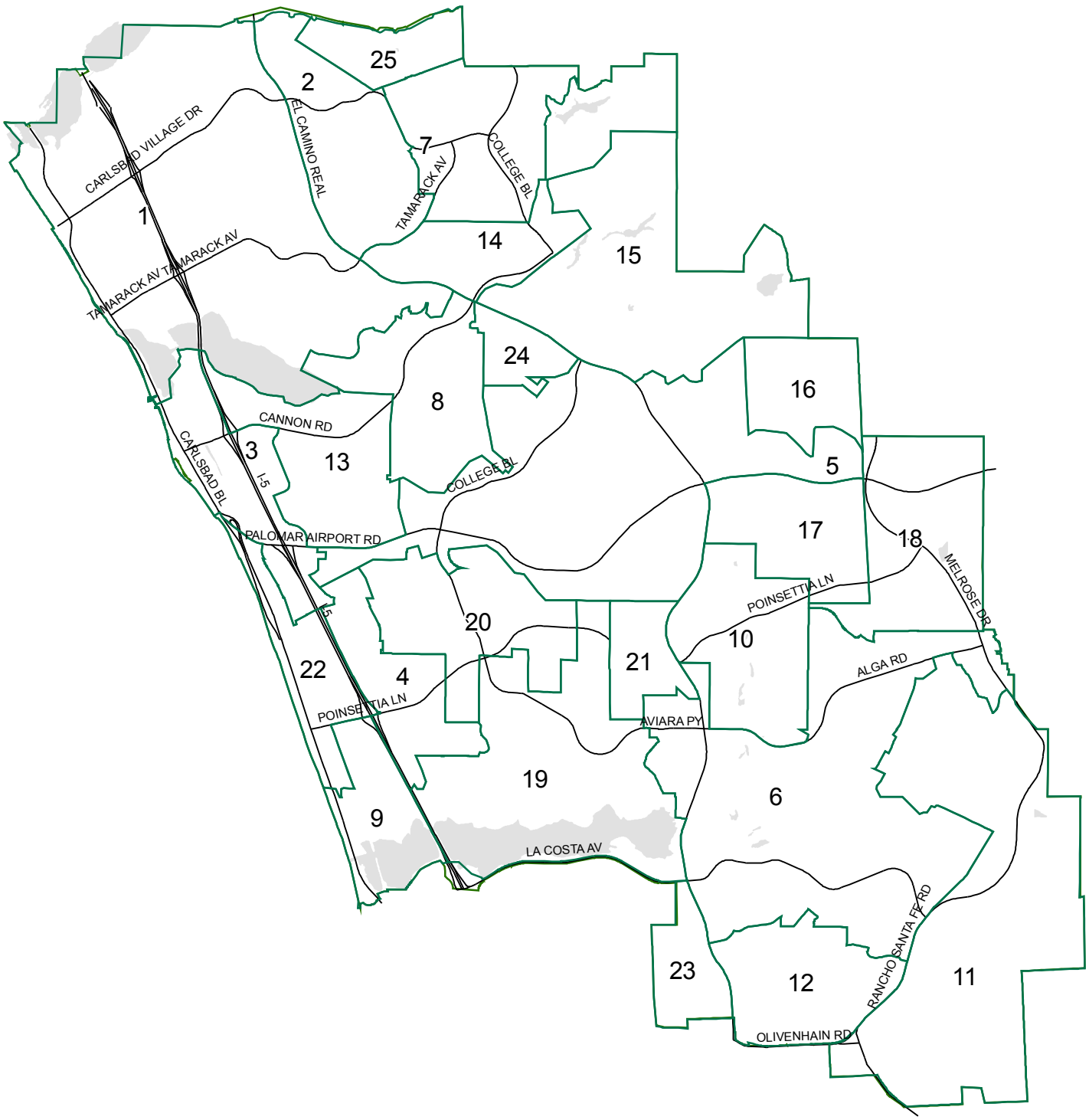

Figure 2
Local Facilities Management Zones

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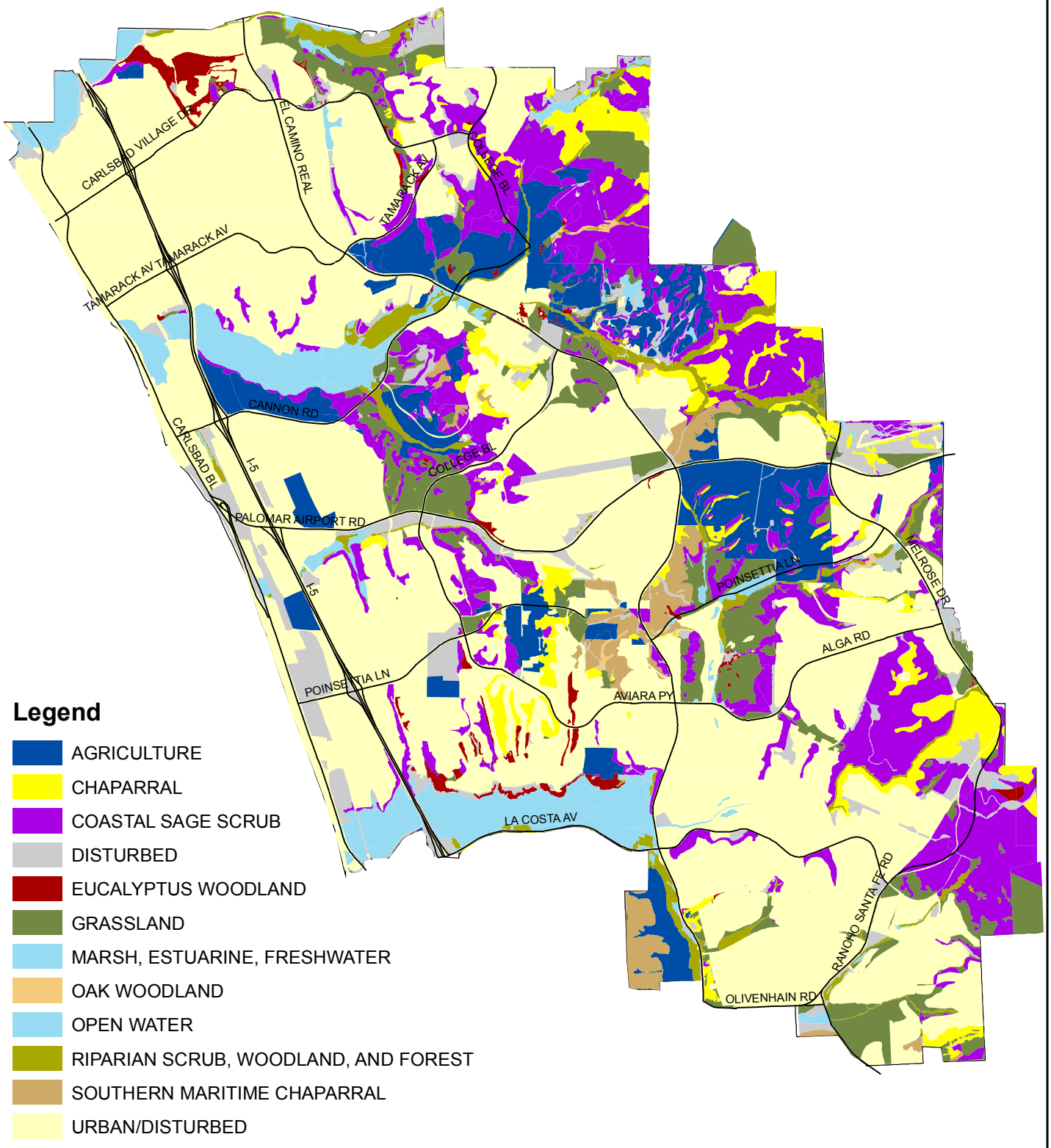

Legend

- AGRICULTURE
- CHAPARRAL
- COASTAL SAGE SCRUB
- DISTURBED
- EUCALYPTUS WOODLAND
- GRASSLAND
- MARSH, ESTUARINE, FRESHWATER
- OAK WOODLAND
- OPEN WATER
- RIPARIAN SCRUB, WOODLAND, AND FOREST
- SOUTHERN MARITIME CHAPARRAL
- URBAN/DISTURBED

Figure 3
Vegetation Map
City of Carlsbad

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CITY OF CARLSBAD CALIFORNIA

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Table 1
Habitat Types within Carlsbad[1]

Vegetation Type	Acres
Grassland[2]	1,856
Coastal Sage Scrub	3,315
Chaparral (Undifferentiated Types)	968
Southern Maritime Chaparral	392
Oak Woodland	29
Eucalyptus Woodland	258
Riparian Scrub, Woodland and Forest	574
Marsh, Estuarine, Freshwater, and Other Wetlands	1,366
Subtotal Habitat[3]	8,758
Agricultural	1,812
Disturbed	1,251
Developed	12,749
Subtotal Developed and Disturbed	15,812
TOTAL- All Lands Within City of Carlsbad	24,570

1. Excludes areas designed as not a part (N.A.P.) in HMP.
2. This category includes both native (perennial) and non-native (annual) grasslands. The acreages of each cannot be distinguished at this time due to the absence of detailed survey data for several large grassland areas.
3. Includes vegetated areas in impact areas of projects with USFWS and CDFG approved mitigation plans.

(See Appendix A for a more detailed description of habitat types within Carlsbad)

List 1: Species Proposed for Coverage under the Carlsbad Subarea Plan

Scientific Name	Common Name	Status [1]	MHCP Subregional Plan Vol. II Page Ref.
Plants			
Chorizanthe orcuttiana	Orcutt's spineflower	FE/CE/NE	4-56
Dudleya blochmaniae ssp. blochmaniae	Blochman's dudleya	FSC	4-74
Euphorbia misera	Cliff spurge	None	4-101
Hazardia orcuttii	Orcutt's hazardia	FSC/CT/NE	4-111
Quercus dumosa	Nuttall's scrub oak	FSC	4-159
Invertebrates			
Panoquina errans	Salt marsh skipper	FSC/OW	4-202
Euphyes vestris harbisoni	Harbison's Dun Skipper	FSC/NE	4-196
Birds			
Pelecanus occidentalis californicus	California brown pelican	FE/CE/FP/OW	4-251
Plegadis chihi	White-faced ibis	FSC/SSC/OW	4-256
Accipiter cooperii	Cooper's hawk	SSC	4-264
Pandion haliaetus	Osprey	SSC/OW	4-269
Falco peregrinus anatum	American peregrine falcon	CE/FP	4-280
Rallus longirostris levipes	Light-footed clapper rail	FE/CE/FP/OW	4-285
Charadrius alexandrinus nivosus	Western snowy plover	FT/SSC/OW	4-291
Sterna elegans	Elegant tern	FSC/SSC/OW	4-299
Sterna antillarum browni	California least tern	FE/CE/FP	4-304
Empidonax traillii extimus	Southwestern willow flycatcher	FE/CE/OW	4-314
Vireo bellii pusillus	Least Bell's vireo	FE/CE/OW	4-321
Polioptila californica californica	Coastal California gnatcatcher	FT/SSC	4-333
Icteria virens	Yellow-breasted chat	SSC/OW	4-360
Aimophila ruficeps canescens	California rufous-crowned sparrow	FSC/SSC	4-366
Passerculus sandwichensis beldingi	Belding's savannah sparrow	FSC/CE/OW	4-371
Passerculus sanwichensis rostratus	Large-billed savannah sparrow	FSC/SSC/OW	4-377
Reptiles			
Cnemidophorus hyperythrus beldingi	Orange-throated whiptail	SSC	4-245

1 See the "Key to Legal and Management Status" that follows List 3.

List 2: Species Coverage Contingent on Other MHCP Subarea Plans being Permitted

Scientific Name	Common Name	Status [1]	MHCP Subregional Plan Vol. II Page Ref.
	Plants		
Acanthomintha ilicifolia	San Diego thornmint [2]	FT/CE/NE	4-9
Ambrosia pumila	San Diego ambrosia	FE/NE	4-16
Ceanothus verrucosus	Wart-stemmed ceanothus [2]	FSC	4-50
Dudleya viscida	Sticky dudleya	FSC	4-89
Ferocactus viridescens	San Diego barrel cactus	FSC	4-106
Quercus engelmannii	Engelmann oak	None	4-165

1 See the "Key to Legal and Management Status" that follows List 3.

2 Coverage for this species is also contingent on funding for management of conserved areas.

List 3: Species Coverage Contingent on Funding for Management of Conserved Areas

Scientific Name	Common Name	Status [1]	MHCP Subregional Plan Vol. II Page Ref.
Plants			
Arctostaphylos glandulosa ssp. *crassifolia*	Del Mar manzanita	FE/NE	4-26
Baccharis vanessae	Encinitas baccharis	FT/CE/NE	4-32
Brodiaea filifolia	Thread-leaved brodiaea	FT/CE/NE	4-37
Comarostaphylis diversifolia ssp diverifolia	Summer holly	FSC	4-63
Corethrogyne filaginifolia var. *linifolia*	Del Mar sand aster	FSC/NE	4-68
Eryngium aristulatum var. *parishii*	San Diego button-celery [3]	FE/CE/NE/OW	4-94
Iva Hayesiana	San Diego marsh elder [4]	FSC	4-116
Myosurus minimum ssp. Apus	Little mousetail [3]	FSC/NE/OW	4-133
Navarretia fossalis	Spreading navarretia [3]	FT/NE/OW	4-140
Orcuttia californica	California Orcutt grass [3]	FE/CE/NE/OW	4-147
Pinus torreyana ssp. *torreyana*	Torrey pine	FSC	4-154
Invertebrates			
Streptocephalus woottoni	Riverside fairy shrimp [3]	FE/NE/OW	4-178
Branchinecta sandiegonensis	San Diego fairy shrimp [3]	FE/NE/OW	4-184

1 See the "Key to Legal and Management Status"below.

3 Coverage for this species is also contingent on the City of Carlsbad receiving legal control over the protection, management, and monitoring of the vernal pools adjacent to the Poinsettia Train Station in Carlsbad.

4 Coverage for this species is also contingent on other MHCP subarea plans being permitted.

Key to Legal and Management Status of Species in Lists 1 - 3

FE Federally Endangered
FT Federally Threatened
BEPA Bald Eagle Protection Act
FSC Federal Species of Concern (former Category 2 Candidate)
CE State Endangered
CT State Threatened
FP State Fully Protected species
RGS State Regulated Game Species
OW Obligate Wetland Species in the MHCP
NE Narrow Endemic Species in the MHCP (Narrow Endemic standards apply to all proposed hardline, standards areas, etc. as described in section 3.7 of MHCP Volume 1

SPM State Special Protected Mammal
SSC State Species of Special Concern
None No Federal, State, or City status

3. Existing Levels of Conservation

For purposes of quantifying existing levels of conservation within the City, the following categories of lands were identified as existing hardline conservation areas:

- State lands designated as preserves or managed primarily for biological resources;
- Mitigation lands identified in plans and agreements for approved projects; and
- Dedicated open space and easements on lands with biological resources,

Within these areas, there are approximately 4,400 acres of habitat.

4. Assessment of Conditions and Options

Over the course of the HMP planning process, the remaining habitats within the City have been evaluated in qualitative and quantitative terms. These evaluations include:

- GIS habitat value and sensitivity models developed and applied to the HMP, MHCP, and regional NCCP plan areas;
- Application of proposed MHCP biological goals, standards, and guidelines;
- Site-specific analysis and planning by project proponents and HMP consultants; and
- Species-specific studies for individual projects and the MHCP, including gnatcatcher metapopulation analyses.

These evaluations yielded the following conclusions regarding conservation options within the City:

1. Habitats associated with listed species and highly restricted plants (e.g., coastal sage scrub, riparian, and southern maritime chaparral types) constitute much of the remaining habitats in the City.

2. A substantial portion of the remaining habitat lands are covered by existing take authorizations, primarily the Fieldstone (aka Bank of America/Villages of La Costa) Habitat Conservation Plan which was approved in 1995. This plan involves some of the highest quality coastal sage scrub in the City. Because the HCP is already approved, the City and wildlife agencies have no ability to require further conservation within this area.

3. Limitations on the long-term viability of natural communities within the City include: a) the relatively small size of remaining blocks of habitats within the City and the level of fragmentation due to existing development; b) the lack of adequate-sized, permanent connections between blocks of habitat and to habitat within the larger region; and c) the potential for habitat fragmentation and degradation from the combined effects of existing and future land uses. These limitations largely dictate the type of preserve system that can be assembled in Carlsbad. The HMP preserve system will contain some core areas but will function primarily as a means of connection between larger preserve areas within

the City and adjacent cities to the north, east, and south. Although important areas of breeding habitat will be provided within the HMP preserve system, the preserve system's major contribution to regional biodiversity will be the maintenance of wildlife linkages and corridors and saving narrow endemic plant species.

4. Populations of gnatcatchers within the City are important to the overall viability of the regional gnatcatcher metapopulation. The populations represent a critical link in the distribution of the species, throughout north San Diego County, contributing significantly to regional gnatcatcher demographics by "launching" high numbers of dispersing juveniles into the Carlsbad-Oceanside corridor, which connects gnatcatcher populations in Orange and Riverside counties with those to the south and east of Carlsbad.